

A BRIEF REVIEW OF THE GENUS *CICINDELA* OF ARGENTINA  
(COLEOPTERA: CICINDELIDAE)

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*Abstract.*—The genus *Cicindela* L. (*sensu* W. Horn) of Argentina is briefly reviewed. Thirty-four taxa are discussed and known ranges are given. A key to the species is presented. Four new species and one new subspecies are described and figured. Three of the new species (*C. halophila*, *C. siccalacicola* and *C. hirsutifrons*) share the same type locality: 24 mi. S. Recreo, Cordoba Province. The fourth new species (*C. stamatoivi*) is described from Tucuman. *C. drakei latifascia* n. ssp. is described from Termas de Rio Hondo, Santiago del Estero Province.

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Introduction

The genus *Cicindela* of Argentina has not been adequately reviewed. It has been presented in the form of checklists by Horn (1905), Bruch (1910), Horn (1915, 1926), Blackwelder (1946) and Rivalier (1954).

The latter author incorporated a study of male genitalia into his work and split the genus into several "genera." Following Rivalier's work, Vidal Sarmiento (1966) gave a detailed account of the male genitalia for many of the species. Although that work was detailed, with respect to the males of the species reviewed, it failed to incorporate a key or deal with females.

The present work treats 34 taxa with five being described as new. I have endeavored to treat all specific and subspecific taxa contained in Horn's (1926) definition of the genus *Cicindela* of Argentina with the exception of *C. cribrata* Brullé. I feel that Rivalier's (1969) placement of *cribrata* into *Pentacomia* Bates is correct. I do not, however, subscribe to his splitting up the New World *Cicindela* in 1954. Rivalier's "genera" are herein treated as subgenera.

Many of the species treated in the present work are quite rare in collections and as a result some were only represented by one or two specimens. In some cases Argentine specimens were not available for study and specimens from other countries had to be utilized. Two species (*C. argentinica* Mandl and *C. obsoletesignata* W. Horn) were unavailable for study which necessitated culling key data from their original descriptions.

All characters used in the key below are easily seen and interpreted. To facilitate usage, with respect to the terminology of the elytral maculation, users are directed to Figure 1 which deals with lunule nomenclature.

Key to Species of *Cicindela* of Argentina

- |   |                               |
|---|-------------------------------|
| 1. Elytra immaculate  | 2                             |
| – Elytra with some degree of maculation   | 4                             |
| 2. Dorsal color dark reddish brown  | <i>rufoaenea</i>              |
| – Dorsal color black  | 3                             |
| 3. Labrum 3 toothed   | <i>obsoletesignata</i>        |
| – Labrum 4 or 5 toothed   | <i>morio</i>                  |
| 4. Genae glabrous   | 5                             |
| – Genae setose  | 13                            |
| 5. Maculation very wide, covering much of elytral surface   | 6                             |
| – Maculation thin or consisting of small spots  | 7                             |
| 6. Basal half of elytra sparsely covered with white setae   | <i>eugeni</i>                 |
| – Basal half of elytra without white setae  | <i>apiata</i>                 |
| 7. Elytral apex immaculate  | 8                             |
| – Elytral apex with maculation  | 9                             |
| 8. Dorsal color black or dark brown   | <i>obscura</i>                |
| – Dorsal color green tinged cupreous red  | <i>aureola</i>                |
| 9. Elytra with distinct subsutural rows of large metallic foveae                                      | 10                            |
| – Elytra without distinct subsutural rows of large metallic foveae                                    | 11                            |
| 10. Size smaller (8 mm in length)   | <i>chlorosticta</i>           |
| – Size larger (12 mm in length)   | <i>staudingeria</i>           |
| 11. Apex of elytra rounded (see Fig. 2a)  | <i>argentata</i> <sup>1</sup> |
| – Apex of elytra angular (see Fig. 2b)  | 12                            |
| 12. Humeral lunule broken—consisting of two small spots   | <i>misella</i> <sup>2</sup>   |
| – Humeral lunule complete and unbroken  | <i>stamatovi</i> n. sp.       |
| 13. Pigment (ground color) contacting lateral edges of elytra   | 14                            |
| – Pigment not contacting lateral edges of elytra (i.e., maculated from humeral area to apical suture) | 24                            |
| 14. Apex of elytra without microserrations  | 15                            |
| – Apex of elytra with microserrations   | 16                            |
| 15. Labrum with a longitudinal black band running through its median                                  | <i>gormazi</i>                |
| – Labrum not as above   | <i>sinuosa</i>                |
| 16. Frons with less than 6 setae  | <i>confluentesignata</i>      |
| – Frons with more than 6 setae  | 17                            |
| 17. Labrum with a longitudinal dark band running through its median                                   | <i>chiliensis</i>             |
| – Labrum not as above   | 18                            |

<sup>1</sup> *C. argentinica* (Mandl) will also key out in this couplet. See under Discussion section.

<sup>2</sup> *Pentacomia cribrata* (Brullé) will also key out in this couplet. It can be separated from *C. misella* Chaudoir by its glabrous undersides. Also, see Rivalier (1969) for further discussion.

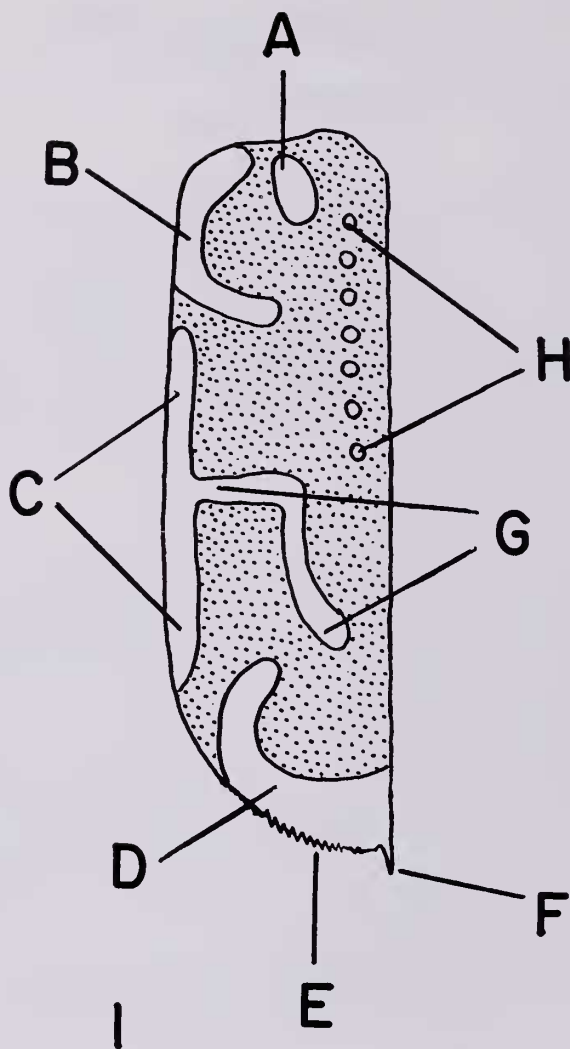


Fig. 1. Left elytron of a hypothetical *Cicindela* species illustrating terminology used in key: A) basal dot, B) humeral lunule, C) marginal line, D) apical lunule, E) microserrations, F) sutural spine, G) middle band, H) subsutural row of foveae.

- |   |                  |
|---|------------------|
| 18. Labrum with more than 9 subapical setae                 | <i>mixtula</i>   |
| – Labrum with 9 or less subapical setae                     | 19               |
| 19. Elytral ground color black                              | <i>melaleuca</i> |
| – Elytral ground color brown or reddish brown               | 20               |
| 20. Maculation not contacting medial lateral edge of elytra | <i>ritsemai</i>  |
| – Maculation contacting medial lateral edge of elytra       | 21               |

- |   |                                  |                             |
|---|----------------------------------|-----------------------------|
| 21. Marginal line not converging on humeral lunule  | <i>drakei drakei</i>             |                             |
| – Marginal line converging on humeral lunule  |                                  | 22                          |
| 22. Size larger (12 mm in length)   |                                  | <i>sinuosa</i>              |
| – Size smaller (9 mm in length)   |                                  | 23                          |
| 23. Head and pronotum dark cupreous red   | <i>drakei pseudochiloleuca</i>   |                             |
| – Head and pronotum dark green  | <i>drakei latifascia</i> n. ssp. |                             |
| 24. Frons completely covered from view with white decumbent setae                               |                                  | <i>hirsutifrons</i> n. sp.  |
| – Frons glabrous or with setae but not covered from view  |                                  | 25                          |
| 25. Elytra dull, reflecting little light  |                                  | 26                          |
| – Elytra shiny, reflective  |                                  | 28                          |
| 26. Vertex glabrous   | <i>confluentesignata</i>         |                             |
| – Vertex setose   |                                  | 27                          |
| 27. Antennal scape glabrous (except for subapical sensory setae)                                |                                  | <i>patagonica</i>           |
| – Antennal scape with several white setae (if setae are rubbed off, minute dimples are present) |                                  | <i>ramosa</i>               |
| 28. Clypeus glabrous  | <i>halophila</i> n. sp.          |                             |
| – Clypeus setose  |                                  | 29                          |
| 29. Antennal scape glabrous (except for subapical sensory setae)                                |                                  | <i>siccalacicola</i> n. sp. |
| – Antennal scape with several white setae   |                                  | <i>nivea</i>                |

In the ensuing section only the new taxa are fully discussed. The remaining species and subspecies are briefly discussed.

The known ranges and collecting data (where available) are presented alphabetically by province. Many of the study specimens are from older collections and carry labels simply stating "Argentina" or "Buenos Aires" or some other province with no other data. For this reason, there are no collecting data provided for several taxa.

The phylogeny of Rivalier (1954), with slight modification, is followed.

#### Subgenus *Cicindelidia* Rivalier, 1954

##### *Cicindela rufoaenea* W. Horn

*Cicindela unicolor* W. Horn 1892, Deutsche Ent. Zeitschr. p. 86 (preoccupied).

*Cicindela rufoaenea* W. Horn 1915, in Wytzman, Gen. Ins. Cic. p. 402.

This species is the only representative of the above subgenus known from Argentina. It can be distinguished immediately by its immaculate, red-brown color and testaceous abdomen.

*Type locality*.—"Argentinisches Hochgebirge."

*Range*.—*Jujuy*: 5 km. S. San Pedro, 5-V-64; *Salta*; Peru; Colombia.

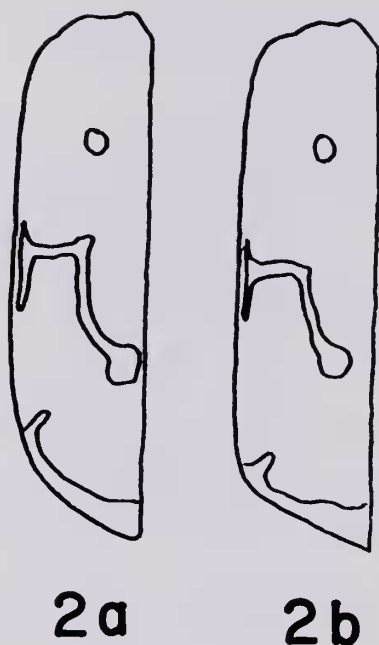


Fig. 2a. Left elytron of *C. argentata* showing a rounded apex. 2b. Left elytron of *C. misella* showing an angular apex.

Subgenus *Brasiella* Rivalier, 1954

*Cicindela argentata argentata* Fabricius

*Cicindela argentata* Fabricius 1801, Syst. Eleuth. I, p. 242.

*C. argentata*, once thought to be a single species, has proven to be a "species swarm." Many of the species within this swarm can only be separated by characters contained within the aedeagus.

Argentine samples of *C. argentata* run from well-marked light-brown individuals to dark-brown or black individuals with broken lunules, seemingly in a random fashion. However, all the samples have several characters in common: truncate labrum, rounded elytral apices and the characteristic *argentata* inner sac of the aedeagus.

*Type locality*.—"America Meridionali."

*Range*.—*Buenos Aires*: San Fernando, III-1956; Corral del Cruz, II-1964; *Chaco*; *Cordoba*: V. Dolores, II-1969; *Formosa*: P. Irigoyen, XII-1950; *Jujuy*; *Misiones*; *Salta*: Gen. Ballivian; C. Olleros, I-1958; *San Luis*; *Santa Fe*: Dpto. Garay, III-1950; Gran Guardia, II-1953; *Santiago del Estero*: Cap. Aeropuerto, II-1961; *Tucuman*: Tucuman, I-51; *Brazil*; *Venezuela*; *Colombia*; *Paraguay*.

*Cicindela argentata semicircumscripta* Mandl

*Cicindela argentata semicircumscripta* Mandl 1958, Ent. Nachr. Österr. Schweiz. Ent., 10 (2), p. 23.

This subspecies can be separated from the nominate form by its greenish elytra and long marginal line.

*Type locality*.—"Santiago del Estero, El Pinto."

*Range*.—Santiago del Estero: El Pinto, XI-1962; Rio Saladillo, 29-XII-1975; Suncho Corral, 28-XII-1975; Paraguay.

*Cicindela argentinica* (Mandl)

*Brasiliella* (sic) *argentinica* Mandl 1963, Ent. Arb. Mus. G. Frey, 14, p. 583.

No specimens of this species were available for study. In reading Mandl's description and studying his accompanying figures, one quickly learns that it is quite difficult to separate *C. argentinica* from *C. argentata*. According to the description, *argentinica* has an almost cylindrical pronotum and an apical lunule that extends a good distance up the suture.

*Type locality*.—"Argentine, Rio Salado, Icano."

*Range*.—At present, known only from the type locality.

*Cicindela obscurella obscurella* Klug

*Cicindela obscurella* Klug 1829, Preis-Verz. Ins. Mus. Berlin, p. 3.

This species can be identified by its lack of an apical lunule and its rounded, slightly produced labrum. Some specimens possess a spot representing the humeral lunule.

*Type locality*.—"Sud-Brasilien."

*Range*.—Buenos Aires: Corral del Cruz, II-1964; Cordoba; Tucuman: Tucuman, 7-II-1908; Brazil; Uruguay.

*Cicindela aureola aureola* Klug

*Cicindela aureola* Klug 1834, Jahrb. Ins. I, p. 35.

*C. aureola* can be separated immediately from the rest of the *argentata* complex by its green tinged cupreous red color. Apparently it is sexually dimorphic, with respect to the shape of the labrum; males possess short labra while the female's is produced.

*Type locality*.—"Sudlichen Brasilien."

*Range*.—Jujuy; Salta; Tucuman; Paraguay; Brazil.

*Cicindela misella misella* Chaudoir

*Cicindela misella* Chaudoir 1854, Bull. Soc. Imp. Nat. Moscou, 27, p. 121.

For years this species was thought to be confined to Central America and northern South America. Vidal Sarmiento (1966) proved its existence in Argentina. It can be separated from *argentata* by its angular elytral apices and characteristic inner sac.

*Type locality*.—"Colombie."

*Range*.—Jujuy; Salta; Venezuela; Colombia north to Guatemala.

*Cicindela stamatovi* n. sp.

(Fig. 3a, b)

*Head*.—Labrum white with a narrow, dark anterior border, equipped with a single row of subapical setae (8 setae), slightly produced, rounded, single-toothed; first four antennal segments metallic cupreous with green reflections; scape with a single subapical seta; second, third and fourth segments with a few erect white setae; clypeus, frons and genae glabrous, finely rugose and striate; vertex glabrous (except for supraorbital sensory setae).

*Thorax*.—Pronotum with sparse decumbent setae on lateral margins and disc, finely rugose, narrowed posteriorly; pro-, meso- and medial metasternum glabrous; remainder of thorax with sparse erect setae.

*Abdomen*.—Lateral edges of venter with sparse covering of decumbent setae, glabrous medially.

*Elytra*.—Both sexes, nearly parallel-sided although slightly wider from basal third to apical fourth, then more or less oblique from apical sixth to apex; both sexes with small sutural spines, microserrate apical margins and shallow green punctae; elytral surface granulate; maculation complete, humeral lunule long and slender, descending nearly to apical half, remainder of lunules of the *argentata* type.

*Color*.—Head, dorsal and lateral portions of thorax metallic cupreous with green reflections; ventral thorax and abdomen metallic green to dull, dark green; elytra cupreous with metallic green punctae.

*Size*.—Male, 6.4 mm length, 2.2 mm width; female, 6.5 mm length, 2.4 mm width.

*Type locality*.—Tucuman, Argentina.

*Holotype*.—Male. Tucuman, II-50, Arggt.

*Allotype*.—Female. Same data as holotype. Holotype and allotype to the American Museum of Natural History, New York City, New York.

*Etymology*.—I take pleasure in naming this species after Dr. John Stamatov, who kindly submitted the specimens for study.

*Diagnosis*.—*C. stamatovi* appears to be closest to *C. misella* in the Argentine fauna. It can be separated from *misella* by its produced labrum and



complete humeral lunules. *C. stamato* is apparently the only species in the "argentata complex" with a complete humeral lunule.

*Cicindela chlorosticta* Kollar  
(Figs. 3, 4)

*Cicindela chlorosticta* Kollar 1836, Ann. Wiener Mus. Naturg., 1 (2), p. 332.

No Argentine representatives of this species were available for study. Key characters were drawn from specimens collected in Brazil.

*Type locality*.—"Brasiliae Provincia Ypanema."

*Range*.—Jujuy; Brazil.

*Cicindela staudingeri* W. Horn

*Cicindela staudingeri* W. Horn 1892, Deut. Ent. Zeitschr., p. 368 (preoccupied).

*Cicindela chlorosticta staudingeri* W. Horn 1915, in Wytsman, Gen. Ins. Cic., p. 404.

No Argentine representatives of this species were available for study. Key characters were drawn from Brazilian specimens. It differs from *chlorosticta* by its larger size and coloration. Most specimens are a brilliant cupreous color.

*Type locality*.—"Sao Paulo."

*Range*.—Argentina; Brazil.

*Cicindela obsoletesignata* W. Horn

*Cicindela obsoletesignata* W. Horn 1895, Deutsche Ent. Zeitschr., p. 91.

No specimens of this species were available for study. It is apparently quite rare in collections. Horn (1895) compares it with *C. hemichrysea* Chevrolat but the coloration is similar to *C. morio* Klug.

*Type locality*.—"St. Catharina."

*Range*.—Santa Fe = Chaco Santafecino; Brazil.

Subgenus *Cylindera* Westwood, 1831

*Cicindela confluentesignata* W. Horn

*Cicindela confluens* W. Horn 1893, Deutsche Ent. Zeitschr., p. 197 (preoccupied).

*Cicindela confluentesignata* W. Horn 1915, in Wytsman, Gen. Ins. Cic., p. 407.



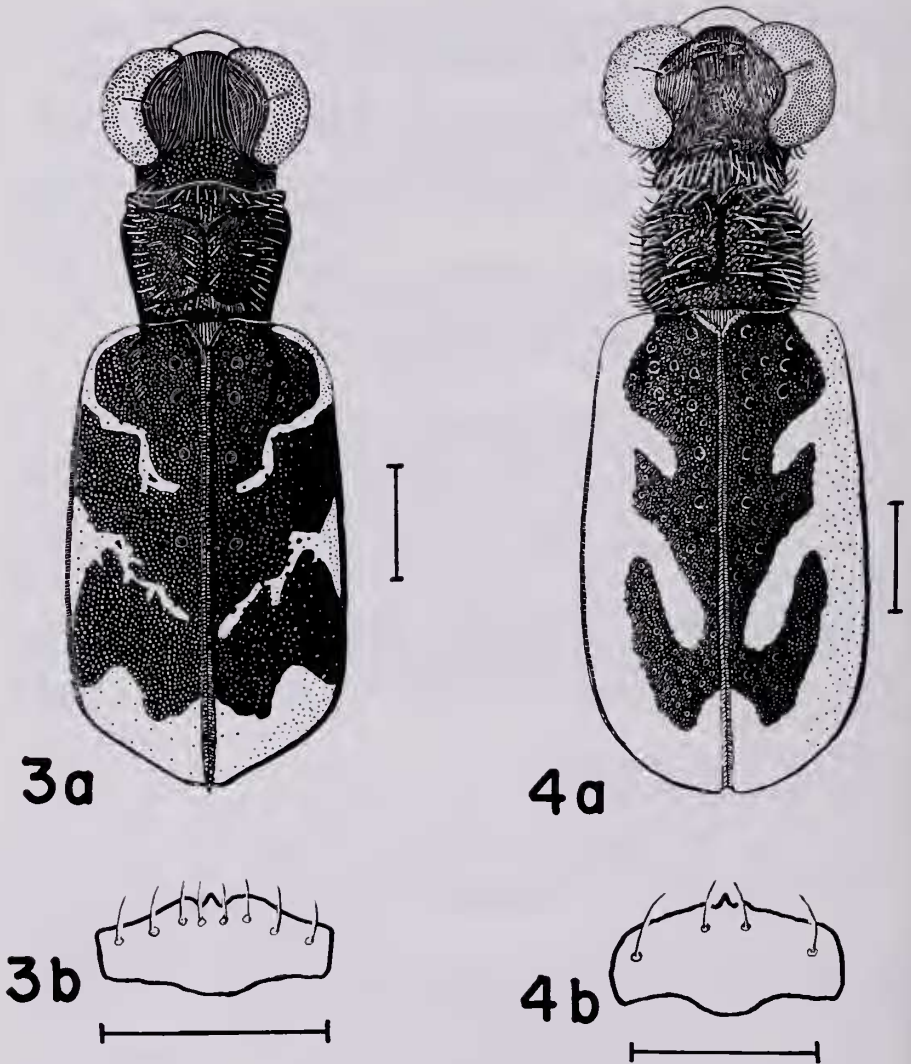


Fig. 3a. Dorsal aspect of holotype male of *C. stamatoivi* n. sp. 3b. Dorsal aspect of labrum of *C. stamatoivi* n. sp. Fig. 4a. Dorsal aspect of male *C. halophila* n. sp. 4b. Dorsal aspect of labrum of *C. halophila* n. sp. All scale lines indicate 1 mm.

One Argentine representative of this species was available for study. Key characters were drawn from that exemplar and from Paraguayan specimens. It is a distinctive species, bronze-black in color, with many elytral foveae.  
*Type locality*.—“Minas Geraes.”

*Range.*—*Entre Rios*: Pronunciamento, XII-1961; *Formosa, Santiago del Estero*; Brazil; Paraguay.

*Cicindela eugeni* Castelnau

*Cicindela eugeni* Castelnau 1835, *Etudes Ent.*, pt. 1, fasc. 1, p. 36.

A distinctive species not treated by Rivalier (1954). Known by its confluent maculation and setose elytra.

*Type locality.*—"Cordova."

*Range.*—*Cordoba, Santiago del Estero*: 50 km. NE. Santiago del Estero, 16-XII-1971.

*Cicindela halophila* n. sp.

(Fig. 4a, b)

*Head.*—Labrum white with a single row of subapical setae (4–5 setae), slightly produced, single toothed; antennal scape metallic green with cupreous reflections, equipped with a single subapical seta; third antennal segment with 6–8 erect white setae; clypeus glabrous, metallic green; genae with sparse covering of white decumbent setae; frons and vertex glabrous (except for two erect supraorbital setae, per side, near front of eye and one over eye), finely wrinkled.

*Thorax.*—Pronotum with sparse covering of white decumbent setae (extreme medial area glabrous), finely rugose; proepisternum, prosternum, proepimeron, procoxa, mesepimeron, mesocoxa, metaepisternum, anterior edge of metasternum and lateral edge of metacoxa with covering of white decumbent setae; mesepisternum with decumbent setae along ventral edge, mesosternum glabrous.

*Abdomen.*—Lateral edges of venter with a covering of white decumbent setae, glabrous medially; posterior two, visible, abdominal segments red-testaceous.

*Elytra.*—Male and female, nearly parallel-sided although slightly wider from basal third to apical third, then gradually rounded from apical fifth to apex; males without sutural spines; females with a small, slightly retracted spine; both sexes with microserrate apical margins and shallow punctae; maculation consists of a broad marginal band running from the humeral area along the lateral edge to the apex and thence to the suture at the apical fifth; humeral lunule enters disc obliquely; middle band begins descent into disc at apical half and descends nearly to apical fifth.

*Color.*—Anterior portion of head metallic green with cupreous reflections; remainder of head cupreous metallic (except for genae, which are metallic green); pronotum metallic red cupreous with metallic green sulci; lateral portions of thorax metallic cupreous; undersides all metallic cupreous with

green tinges; abdomen dull green metallic with last two segments red-testaceous; elytra bright red-brown with green punctae throughout pigmented portion.

*Size*.—Male, 7.5 to 7.9 mm in length, 2.5 to 2.8 mm in width; female, 8.1 to 8.5 mm in length, 2.8 to 3.0 mm in width.

*Type locality*.—Argentina, Cordoba Province, 24 mi. S. Recreo.

*Holotype*.—Male. 24 mi. S. of Recreo, Cordoba, R. A., II-9-51, Salt Flat, Ross and Michelbacher collectors.

*Allotype*.—Female. Same data as holotype.

*Paratypes*.—4 males, 3 females (one female damaged), same data as holotype; 2 males, La Colina B. A., Buenos Aires, Arg., 12-9-1938, Carl J. Drake; 1 female, Estrella, Chaco, Prg., XII-43, N:1. Holotype, allotype and three paratypes to the California Academy of Sciences, San Francisco, California; three paratypes to the National Museum of Natural History, Washington, D.C.; one paratype to the American Museum of Natural History, New York City, New York. The remaining paratypes are in the author's collection.

*Etymology*.—Name derived from the Greek for salt-lover, alluding to the new species' occurrence on a salt playa.

*Diagnosis*.—*C. halophila* n. sp. appears to be closest to *C. eugeni*. It can be separated from that species by slightly different markings, color, elytral lustre, and absence of setae on the anterior basal half of the elytra, and the presence of setae on the genae.

#### *Cicindela morio morio* Klug

*Cicindela morio* Klug 1834, Jahrb. Ins. I, p. 16.

No Argentine representatives were available for study. Key data were obtained from Brazilian specimens.

*Type locality*.—"Brasilien."

*Range*.—N. Argentina; Brazil.

#### *Cicindela sinuosa* Brullé

*Cicindela sinuosa* Brullé 1837, Voyage Orbigny, Ins. Col., p. 8.

A single female specimen referable to this species, labeled "Misiones," was used for key data. Brullé compared *sinuosa* with *C. trisignata* Dejean and his description seems to maintain that comparison. The illustration by Horn (1938, Table 84, Fig. 11), however, bears little resemblance to Brullé's description or the specimen currently at hand. The study specimen (badly damaged) resembles a broadly marked *C. mixtula* W. Horn.

*Type locality*.—"Corrientes."

*Range*.—*Corrientes*; *Entre Rios*; *Misiones*.

*Cicindela mixtula mixtula* W. Horn

*Cicindela mixta* W. Horn 1892, Deutsche Ent. Zeitschr., p. 215. (preoccupied).

*Cicindela mixtula* W. Horn 1915, in Wytsman, Gen. Ins. Cic., p. 409.

Apparently a fairly common species in Argentina—at least it is frequently collected.

*Type locality*.—"Tarija (Bolivia)."

*Range*.—*Catamarca*: S. Maria, 19-I-1945; *Formosa*: Desmonte, XII-1950; *Jujuy*: Quemado, III-1926; *Mendoza*; *Salta*: La Termes, 17-X-1975; *San Juan*: Retamito, 17-III-1907; *San Luis*: Kahuel Mopa, I-1964; *Tucuman*: Cadillal, 4-XII-1975; Tucuman, 20-XI-1913, 2-XI-1916, 30-XI-1919; Vipos, IV-1960; Bolivia.

*Cicindela drakei drakei* W. Horn

*Cicindela drakei* W. Horn 1892, Deutsche Ent. Zeitschr., p. 85.

This species is easily confused with *C. melaleuca reedi* W. Horn but, may be distinguished by its brown color, instead of the black of *reedi*.

*Type locality*.—"Mendoza."

*Range*.—*Mendoza*; *Salta*; *Tucuman*.

*Cicindela drakei pseudochiloleuca* W. Horn

*Cicindela drakei pseudochiloleuca* W. Horn 1908, Ent. Wochenblatt, 25, p. 209.

Subspecies *pseudochiloleuca* is differentiated by its smaller size and the shape and extent of the lunules; it has a marginal line that is connected to the humeral lunule, something not found in the nominate form. Also, *pseudochiloleuca* possess a rather diffuse, indistinct descending portion of the middle band.

*Type locality*.—"Tucuman (Argentinien)."

*Range*.—*Tucuman*.

*Cicindela drakei latifascia* n. ssp.

(Fig. 5)

Similar in most respects to subspecies *pseudochiloleuca* but differing in that the new subspecies possesses a green head and pronotum (as opposed to the cupreous color of the former) and the lunules are much wider and more distinct.

*Type locality*.—Terma-Rio Hondo, Santiago del Estero Province, Argentina.

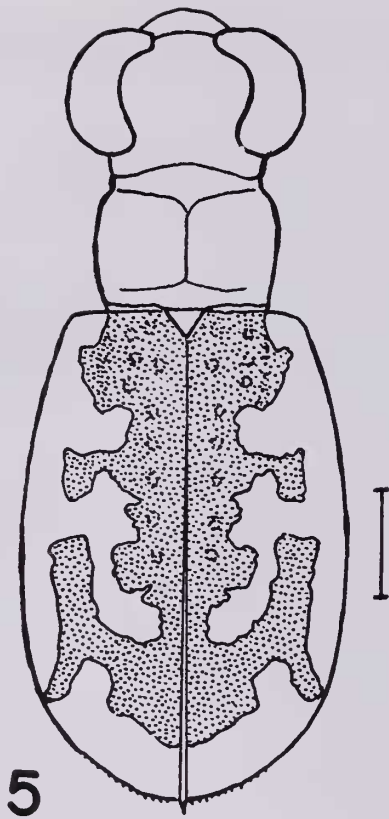


Fig. 5. Dorsal aspect of holotype male of *C. drakei latifascia* n. ssp. Scale line indicates 1 mm.

*Holotype*.—Male. Argentina, Sgo. Estero, Termas de Rio Hondo, 30-XII-1975, R. M. Bohart. Holotype to the University of California, Davis collection.

*Etymology*.—Name derived from the Latin *lata* (wide) and *fascia* (mark).

*Diagnosis*.—The new subspecies can be easily separated from the nominate subspecies and *pseudochiloleuca* by its green head and pronotum and the very wide markings. After studying long series of *pseudochiloleuca* (to which *latifascia* appears closest) from Tucuman, I found no tendency toward wide lunules or green coloration of the head or pronotum.

*Cicindela melaleuca melaleuca* Dejean

*Cicindela melaleuca* Dejean 1831, Spec. Col. V, p. 238.

*C. melaleuca* is a distinctive black species with a humeral lunule that normally comes in contact with the anterior-most part of the middle band.

*Type locality*.—"Buenos-Ayres."

*Range*.—Buenos Aires; San Fernando, XII-1962; Guamini, II-1964; La Colina, 9-XII-1938; Mendoza; Patagonia.

*Cicindela melaleuca reedi* W. Horn

*Cicindela reedi* W. Horn 1895, Deutsche Ent. Zeitschr., p. 88.

This subspecies has been placed under *C. drakei* by several workers including Horn (1926). Horn (1938), however, placed it with *C. melaleuca*, where I feel it justly belongs.

The differences in genitalia and external morphologies between *C. drakei* and *C. melaleuca* are slight. When large samples are examined from their respective ranges it may be found that the two species are actually one—a brown form with its melanic counterpart.

*Type locality*.—"Patagonia."

*Range*.—Patagonia.

*Cicindela siccalacicola* n. sp.

(Fig. 6a, b)

*Head*.—Labrum white with a narrow dark anterior border, equipped with a single row of subapical setae (6–9 setae), slightly produced, rounded, single toothed; first four antennal segments metallic cupreous with green reflections; scape with a single subapical seta; second, third and fourth segments with several erect setae; clypeus and genae with sparse covering of partially erect white setae; frons and vertex with sparse covering of partially erect to erect white setae.

*Thorax*.—Pronotum sparsely covered with partially erect white setae, finely rugose; pro- and mesosternum glabrous, remainder of thorax with sparse, erect setae.

*Abdomen*.—Lateral edges of venter with a covering of decumbent setae, glabrous medially.

*Elytra*.—Male, nearly parallel-sided although slightly wider from basal fourth to apical third, then gradually rounded from apical fourth to apex; female, markedly widened from basal third to apical third, then gradually rounded to apex; both sexes equipped with small sutural spines, microserate apical margins and shallow, green punctae; maculation complete, marginal line broad, connected with humeral lunule and outer edge of apical lunule; humeral lunule a knob pointing laterally; middle band elbowed at center of elytral disc, descending to edge of apical third; apical lunule large, comma-shaped.



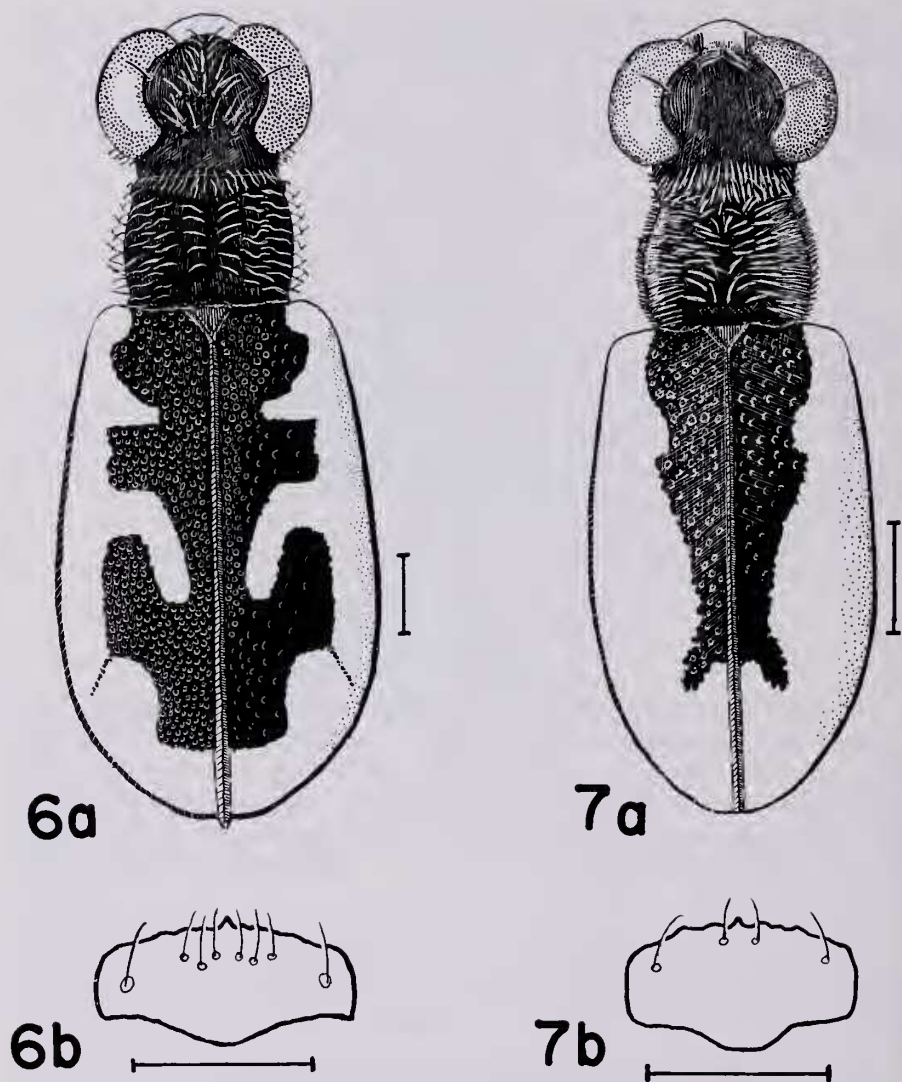


Fig. 6a. Dorsal aspect of male *C. siccalucicola* n. sp. 6b. Dorsal aspect of labrum of *C. siccalucicola* n. sp. Fig. 7a. Dorsal aspect of holotype male of *C. hirsutifrons* n. sp. 7b. Dorsal aspect of labrum of *C. hirsutifrons* n. sp. All scale lines indicate 1 mm.

*Color*.—Head predominately metallic cupreous with green reflections; pronotum cupreous with green reflections, medial sulcus metallic green; lateral portions of thorax metallic cupreous; ventral portions of thorax blue-green metallic with cupreous reflections; abdomen dark brown with green



reflections, cupreous laterally; elytra dark red-brown covered with metallic green punctae.

*Size*.—Male, 10.5 mm length, 3.5 mm width; female, 11.5 mm length, 4.5 mm width.

*Type locality*.—24 mi. S of Recreo, Cordoba Province, Republic of Argentina.

*Holotype*.—Male. 24 mi. S Recreo, Cordoba, R. A., II-9-51, Salt Flat, Ross and Michelbacher collectors.

*Allotype*.—Female. Same data as holotype.

*Paratypes*.—16 males, 12 females same data as holotype.

Holotype, allotype and 17 paratypes to the California Academy of Sciences, San Francisco, California; one paratype each to the National Museum of Natural History, Washington, D.C., and the American Museum of Natural History, New York City, New York. The remaining paratypes are in the author's collection.

*Etymology*.—The name of the new species is derived from the latin *sicca* (dry), *lacuna* (lake), and *incola* (dweller).

*Diagnosis*.—This species is apparently not closely related to any other known from Argentina. With its unusual maculation pattern and near-glossy elytra it is quite distinct.

*Discussion*.—The range of this species apparently extends into Buenos Aires Province as I have before me a female (not in the type series) collected at La Colina. This specimen is larger (13.5 mm in length) than the females of the Cordoba series and is dark green in color. The status of this population is unknown.

#### *Cicindela ritsemai* W. Horn

*Cicindela ritsemae* W. Horn 1895, Notes Leyd. Mus., 17, p. 15.

*Cicindela ritsemai* W. Horn 1915, in Wytzman, Gen. Ins. Cic., p. 409.

A distinctive little species, apparently rare in collections. It slightly resembles *C. drakei pseudochiloleuca*, but can be separated from that taxon by the marginal line that fails to contact the elytral lateral margins.

*Type locality*.—"Argentiniae (Provincia Catamarca)."

*Range*.—Catamarca; Cordoba; Santiago del Estero: Termas de Rio Hondo, XII-30-1975; Suncho Corral, XII-28-1975; Tucuman: Cadillal, XII-4-1975.

#### *Cicindela gormazi* Reed

*Cicindela gormazi* Reed 1871, Ent. Mo. Mag., 8, p. 76.

No Argentine specimens were available for study. Key data were drawn from Chilean specimens.

*Type locality*.—"Chile merid."

*Range*.—Chubut; Patagonia; Chile.

*Cicindela chiliensis* Audouin & Brullé

*Cicindela chiliensis* Audouin & Brullé 1839, Arch. Mus. Hist. Nat., 1, p. 133.

No Argentine representatives of this species were available for study. Key data were extracted from Chilean specimens.

*Type locality*.—"Chili."

*Range*.—Chubut; Patagonia; Chile.

*Cicindela patagonica patagonica* Brullé

*Cicindela patagonica* Brullé 1837, Voyage Orbigny, Ins. Col., p. 7.

This species is readily confused with *C. ramosa* Brullé. They are easily separated by the lack or presence of setae on the scape of the antenna.

Nominate *patagonica* is a brown tiger beetle with fairly thin markings.

*Type locality*.—"Rio Negro (Patagonie)."

*Range*.—Buenos Aires; Patagonia.

*Cicindela patagonica cherubim* Chevrolat

*Cicindela cherubim* Chevrolat 1858, Ann. Soc. Ent. France, ser. 3, 6, p. 315.

Similar to the nominate form except that the markings are much wider, the ground color is blue and the elytra are expanded laterally.

*Type locality*.—"Montivideo."

*Range*.—Buenos Aires; Uruguay.

*Cicindela patagonica bergiana* W. Horn

*Cicindela patagonica* var. *bergiana* W. Horn 1895, Anal. Mus. Nac. Buenos Aires, 4, p. 174.

Identical with the preceding form except that the ground color is brown.

*Type locality*.—"Montevideo."

*Range*.—Buenos Aires; Uruguay.

*Cicindela apiata apiata* Dejean

*Cicindela apiata* Dejean 1825, Spec. Col., 1, p. 86.

Apparently the most common member of the genus is Argentina—at least it is collected more often than other species.

*Type locality*.—"meridionale du Bresil."

*Range*.—*Buenos Aires*: Buenos Aires, II-1936, XII-1940; La Colina, 29-XI-1938; R. Sauce Grande, 23-II-1968; San Fernando, I-1962, Tandileofu, 23-II-1968; Veronica, I-1922; *Cordoba*: 22 km. S. Alta Gracia, 18-XI-1975; Capilla del Monte; Cosquin, 1-9-III-1920; *Entre Rios*: Concordia; 4 km. N. Va. San Jose, 15-XI-1973; *Mendoza*; *San Luis*; *Santiago del Estero*: Termas de Rio Hondo, 30-XII-1975; *Tucuman*; Brazil, Paraguay; Uruguay.

*Cicindela ramosa* Brullé

*Cicindela ramosa* Brullé 1837, Voyage Orbigny, Ins. Col., p. 7.

A distinctive species with very broad markings. It is usually green in color.

*Type locality*.—"baie de San-Blas."

*Range*.—*Buenos Aires*: Buenos Aires, XII-1938; Guamini, II-1964; Lag. Las Tunas, 4-IX-1961; *Catamarca*: Andaleala, XI-1945; *Patagonia*; Uruguay.

*Cicindela nivea nivea* Kirby

*Cicindela nivea* Kirby 1818, Trans. Linn. Soc. London, 12, p. 376.

No Argentine representatives of this subspecies were available for study. Key data were drawn from Brazilian specimens.

It is a large Argentine *Cicindela* (13 mm in length) with markings so broad they completely cover the elytra with white in most examples.

*Type locality*.—"Brasilia."

*Range*.—*Buenos Aires*; *Misiones*; *Entre Rios*; Brazil; Uruguay.

*Cicindela nivea orbigny* Guérin-Méneville

*Cicindela intricata* Brullé 1837, Voyage Orbigny, Ins. Col., p. 7 (preoccupied).

*Cicindela orbigny* Guérin-Méneville 1839, Rev. Zool., p. 296.

Differentiated from the nominate form by the increased amount of pigmentation on the elytra.

*Type locality*.—"la Patagonie."

*Range*.—*Buenos Aires*: Necochea, II-1927, XII-1963; *Patagonia*; Uruguay.

*Cicindela hirsutifrons* n. sp.

(Fig. 7a, b)

*Head*.—Labrum testaceous with a narrow border of dark brown on anterior edge (labral color in a degreased specimen would probably be white),

equipped with a single row of subapical setae (4 setae), produced, rounded, single toothed; first four antennal segments green-metallic with cupreous reflections, scape with a single subapical seta, segments 3 and 4 nearly covered with broad, white decumbent setae; segment 2 glabrous; clypeus and genae with dense covering of wide, white decumbent setae; frons and anterior edge of vertex completely covered with wide, decumbent setae; remainder of vertex glabrous (except for supraorbital sensory setae); base of mandibles with a sprinkling of decumbent setae.

*Thorax*.—Pronotum nearly covered with white decumbent setae, disc sparsely setose, finely rugose; proepisternum, proepimeron, procoxa, mesepimeron, socoxa, metaepisternum, anterior edge of metasternum, ventral edge of mesepisternum and lateral edge of metacoxa with dense covering of white decumbent setae; mesosternum glabrous.

*Abdomen*.—Lateral edges of venter with dense covering of white decumbent setae, sparsely setose medially; posterior two visible, abdominal segments red-testaceous.

*Elytra*.—Male, nearly parallel-sided, slightly expanded from basal fourth to apical fourth, then gradually rounded to apex; female, unknown; male without sutural spines or microserrate apical margins, shallow punctae cover surface; maculation consists of a band of white starting at the humerus and running to the suture at the apical fourth gradually widening as it progresses so that over 60% of the elytra are white; middle band, humeral and apical lunules are only hinted at, very confluent type of maculation.

*Color*.—What can be discerned (due to extreme pilosity) of the anterior portion of the head is metallic green with cupreous reflections; genae metallic cupreous; vertex metallic cupreous with green reflections; pronotum metallic cupreous with medial sulcus metallic green; lateral and ventral portions of thorax metallic cupreous with green tinge; abdomen dark brown with metallic red reflections with last two segments red-testaceous; elytra bright red metallic.

*Size*.—Male, 8.6 mm in length, 2.5 mm in width; female, unknown.

*Type locality*.—24 mi. S. Recreo, Cordoba Province, Republic of Argentina.

*Holotype*.—Male (damaged). 24 mi. S. Recreo, Cordoba, R. A., 9-II-1951; Salt Flat, Ross and Michelbacher collectors. Holotype to the California Academy of Sciences, San Francisco, California.

*Etymology*.—The new species name is a combination of the latin *hirsuta* (hairy) and *frons* (forehead).

*Diagnosis*.—*C. hirsutifrons* appears to be closer to *C. nivea* than to any other species in Argentina. It can be separated readily from *nivea* by its smaller size, coloration, extent of pilosity, shape and type of maculation.

*Remarks*.—Although the holotype is damaged (it appears to have been

struck with the edge of a collecting net); it is nonetheless complete, except for a portion of one antenna.

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#### Literature Cited

- Bruch, C. 1910. Catalogo sistematico de los coleopteros de la Republica Argentina. Rev. Mus. La Plata 4:143-166.
- Blackwelder, R. E. 1944. Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America. Part I. Bull. U.S. Natl. Mus., No. 185:1-188.
- Horn, W. 1895. Zwolf neue Cicindeliden-Species. Deutsche Ent. Zeitschr. 1895:81-93.
- . 1905. Systematischer Index der Cicindeliden, 56 pp. Berlin. (Published in connection with Deutsche Ent. Zeitschr., 1905, Heft 2.)
- . 1915. Coleoptera. Adephaga. Family Carabidae, subfamily Cicindelinae. Genera insectorum dirges par P. Wytzman. Louis Desmet-Verteneuil, Brussels. Fasc. 82C:209-486, 8 pls.
- . 1926. Carabidae: Cicindelinae. In Junk, W., Coleopterorum catalogus. Berlin. 1:1-345.
- . 1938. 2000 Zeichnungen von Cicindelinae. Ent. Beih., Berlin-Dahlem. 5:1-71, 90 pls.
- Rivalier, E. 1954. Demembrement du genre *Cicindela* Linne. II. Faune americaine. Rev. franc. d'Ent. 21:249-268.
- . 1969. Demembrement du genre *Odontochila* (Col. Cicindelidae) et revision des principales especes. Ann. Soc. Ent. France. (N. S.). 5 (1):195-237.
- Vidal Sarmiento, J. 1966. Las especies Argentinas de los generos *Cicindelidia* Riv., *Brasiella* Riv. y *Cylindera* Westwood. Rev. Mus. La Plata. (N. S.). 9 (68):25-46.

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